This can be a non-trivial task, for example as with parallel processes or some unusual software bugs..  
Proficient programming usually requires expertise in several different subjects, including knowledge of the application domain, details of programming languages and generic code libraries, specialized algorithms, and formal logic.  
 Implementation techniques include imperative languages (object-oriented or procedural), functional languages, and logic languages.  
Many applications use a mix of several languages in their construction and use.  
Some text editors such as Emacs allow GDB to be invoked through them, to provide a visual environment.  
 High-level languages made the process of developing a program simpler and more understandable, and less bound to the underlying hardware.  
 The first computer program is generally dated to 1843, when mathematician Ada Lovelace published an algorithm to calculate a sequence of Bernoulli numbers, intended to be carried out by Charles Babbage's Analytical Engine.  
  
 Computer programming or coding is the composition of sequences of instructions, called programs, that computers can follow to perform tasks.  
 Programs were mostly entered using punched cards or paper tape.  
Many programmers use forms of Agile software development where the various stages of formal software development are more integrated together into short cycles that take a few weeks rather than years.  
 Different programming languages support different styles of programming (called programming paradigms).  
Provided the functions in a library follow the appropriate run-time conventions (e.g., method of passing arguments), then these functions may be written in any other language.  
Integrated development environments (IDEs) aim to integrate all such help.  
It is usually easier to code in "high-level" languages than in "low-level" ones.  
One approach popular for requirements analysis is Use Case analysis.